

REMARKS

This is intended as a full and complete response to the Office Action dated April 4, 2005, having a shortened statutory period for response set to expire on July 4, 2005. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, the paragraph [0015] has been amended to correct minor editorial problems. No new matter has been added by the amendment.

Claims 1-14, 17 and 18 remain pending in the application after entry of this response. Claims 15-16 have been cancelled by Applicants without prejudice. Claims 1, 3-5, and 11-14 have been amended and new claims 17 and 18 have been added. No new matter has been added by either the amendments or new claims.

Claims 3-5 and 12-14 are rejected under 35 USC §112, second paragraph. Claims 1, 3-7, 9, and 11-16 are rejected under 35 USC §102(a) as being anticipated by Chung (U.S. Pat. No. 6,819,564). Claim 2 is rejected under 35 USC §103(a) as being unpatentable over Chung in view of Bartley (U.S. Pat. No. 6,084,775). Claims 8 and 10 are rejected under 35 USC §103(a) as being unpatentable over Chung. Finally, the Examiner has objected to certain aspects of the drawings. Reconsideration of the claims and drawings is requested for reasons presented below.

Drawings

The drawings are objected to under 37 CFR §1.84(p)(5). In the objection, the Examiner states that the drawings do not include the reference numeral "404." Paragraph [0015] of the specification has been amended to remove the reference numeral "404." Withdrawal of the objection is respectfully requested.

Claim Rejections – 35 USC §112

Claims 3-5 and 12-14 are rejected under 35 USC §112, second paragraph. In the rejection, the Examiner states that the claims include functional recitations that are indefinite because they are not supported by recitations in the claims of sufficient structure to accomplish the functions. Claims 3-5 and 12-14 have been amended to overcome the rejection. Withdrawal of the rejection is therefore respectfully requested.

Claim Rejections – 35 USC §102

Claims 1, 3-7, 9, and 11-16 are rejected under 35 USC §102(a) as being anticipated by Chung. Regarding claims 1, 3-7, and 9, Chung does not teach, suggest, or disclose that “the heat sink assembly is configured such that air flows directly from the fan along the bottom surface of the heat sink assembly,” as recited in amended claim 1. In the Background section, Chung discloses heat dissipation module 1, where air flows from the fan downwardly to the flat bottom of the heat sink 4. (Chung, col. 1, lines 27-28; FIGS. 1 and 2.) Chung observes that this flow causes a stagnation zone of air in a central area, A, of the heat sink 4. Chung’s invention basically reconfigures the base 130 into a hill shape 134 (or protruding portion) and places a fin assembly 140 on each side of the hill so that the air flowing from the fan 120 will have a smoother transition. However, the air flowing from Chung’s fan 120 still travels in a downward direction and must transition to an angle of approximately 45 degrees. (Chung, col. 3, lines 13-15; FIG. 9.) Thus, the airflow in Chung is not along the bottom surface of disclosed heat sink assembly, as recited in amended claim 1. For this reason, amended claim 1 is patentable over Chung. Claims 3-7, 9, 17, and 18 are also patentable over Chung since they depend from amended claim 1.

Regarding claims 11-16, claims 15 and 16 have been incorporated into independent claim 11. As the rejection of claim 16 applies to amended claim 11, Applicant respectfully traverses the rejection. Chung does not teach, suggest, or disclose a heat sink lid configured such that “a portion of an air channel in the heat sink assembly is left uncovered ... the heat sink lid includ[ing] an edge configured to reduce turbulent flow of air escaping from the air channel and flowing across the edge and substantially perpendicular to a direction of air flow within the air channel,” as recited in amended claim 11. In the module 1 illustrated in FIGS. 1 and 2 of Chung, the air flows parallel to the edges of the fan housing. In the modules 100 of FIGS. 3-5 and 8 of Chung, the airflow is either parallel or at an angle of approximately 45 degrees to the edges of the cover 110. In the module 100 of FIG. 6 of Chung, the cover 110 does not leave any portion of an air channel uncovered. Since none of these figures disclose the structure recited in amended claim 11, this claim is patentable over Chung. Since claims 12-14 depend from amended claim 11, they too are patentable over Chung.

Claim Rejections – 35 USC §103

Claim 2 is rejected under 35 USC §103(a) as being unpatentable over Chung in view of Bartley. Applicant respectfully traverses. Bartley discloses nothing more than a heat sink 41 having a low melting point release layer 47. Bartley does not disclose either a heat sink lid or teach how a fan interacts with the heat sink 41. Thus, Bartley fails to cure the deficiencies of Chung set forth above. For these reasons, claim 1 and claim 2, dependent thereon, are patentable the combination of Chung and Bartley.

Lastly, claims 8 and 10 are patentable over Chung since they depend from allowable amended claim 1, discussed above.

Conclusion

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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